عنوان مقاله:

Adaptive Sliding Mode Control of a pH Process

محل انتشار:

پنجمین کنگره بین المللی مهندسی شیمی (سال: 1386)

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خلاصه مقاله:

The pH process is known as a highly nonlinear and time-varying system which motivates the use of more elaborate strategies than a conventional PI controller. In this work, an adaptive sliding mode technique for control of pH processes is proposed. It is shown that the proposed scheme is robust to disturbances in the reaction invariants of the feed stream and sustained loss of the buffer stream. Despite its simple structure, the sliding mode controller shows superior performance as compared to the backstepping strategy proposed in the literature for pH processes. The stability of the proposed scheme is established via the Lyapunov stability theorem.

کلمات کلیدی:

Backstepping controller, Parametric uncertainty, pH process, Sliding mode control

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